



SEQUENCE LISTING

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<120> Ligands Directed to the Non-Secretory Component,  
Non-Stalk Region of pIgR and Methods of Use Thereof

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<160> 26

<170> PatentIn Ver. 2.1

<210> 1  
<211> 764  
<212> PRT  
<213> Homo sapiens

<220>  
<223> human polymeric Immunoglobulin receptor (pIgR)

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Ser Thr Lys Ser Pro Ile Phe Gly Pro Glu Glu Val Asn Ser Val Glu  
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Gly Asn Ser Val Ser Ile Thr Cys Tyr Tyr Pro Pro Thr Ser Val Asn  
35 40 45  
Arg His Thr Arg Lys Tyr Trp Cys Arg Gln Gly Ala Arg Gly Gly Cys  
50 55 60  
Ile Thr Leu Ile Ser Ser Glu Gly Tyr Val Ser Ser Lys Tyr Ala Gly  
65 70 75 80  
Arg Ala Asn Leu Thr Asn Phe Pro Glu Asn Gly Thr Phe Val Val Asn  
85 90 95  
Ile Ala Gln Leu Ser Gln Asp Asp Ser Gly Arg Tyr Lys Cys Gly Leu  
100 105 110  
Gly Ile Asn Ser Arg Gly Leu Ser Phe Asp Val Ser Leu Glu Val Ser  
115 120 125

Gln Gly Pro Gly Leu Leu Asn Asp Thr Lys Val Tyr Thr Val Asp Leu  
 130 135 140  
 Gly Arg Thr Val Thr Ile Asn Cys Pro Phe Lys Thr Glu Asn Ala Gln  
 145 150 155 160  
 Lys Arg Lys Ser Leu Tyr Lys Gln Ile Gly Leu Tyr Pro Val Leu Val  
 165 170 175  
 Ile Asp Ser Ser Gly Tyr Val Asn Pro Asn Tyr Thr Gly Arg Ile Arg  
 180 185 190  
 Leu Asp Ile Gln Gly Thr Gly Gln Leu Leu Phe Ser Val Val Ile Asn  
 195 200 205  
 Gln Leu Arg Leu Ser Asp Ala Gly Gln Tyr Leu Cys Gln Ala Gly Asp  
 210 215 220  
 Asp Ser Asn Ser Asn Lys Lys Asn Ala Asp Leu Gln Val Leu Lys Pro  
 225 230 235 240  
 Glu Pro Glu Leu Val Tyr Glu Asp Leu Arg Gly Ser Val Thr Phe His  
 245 250 255  
 Cys Ala Leu Gly Pro Glu Val Ala Asn Val Ala Lys Phe Leu Cys Arg  
 260 265 270  
 Gln Ser Ser Gly Glu Asn Cys Asp Val Val Val Asn Thr Leu Gly Lys  
 275 280 285  
 Arg Ala Pro Ala Phe Glu Gly Arg Ile Leu Leu Asn Pro Gln Asp Lys  
 290 295 300  
 Asp Gly Ser Phe Ser Val Val Ile Thr Gly Leu Arg Lys Glu Asp Ala  
 305 310 315 320  
 Gly Arg Tyr Leu Cys Gly Ala His Ser Asp Gly Gln Leu Gln Glu Gly  
 325 330 335  
 Ser Pro Ile Gln Ala Trp Gln Leu Phe Val Asn Glu Glu Ser Thr Ile  
 340 345 350  
 Pro Arg Ser Pro Thr Val Val Lys Gly Val Ala Gly Ser Ser Val Ala  
 355 360 365  
 Val Leu Cys Pro Tyr Asn Arg Lys Glu Ser Lys Ser Ile Lys Tyr Trp  
 370 375 380  
 Cys Leu Trp Glu Gly Ala Gln Asn Gly Arg Cys Pro Leu Leu Val Asp  
 385 390 395 400  
 Ser Glu Gly Trp Val Lys Ala Gln Tyr Glu Gly Arg Leu Ser Leu Leu  
 405 410 415  
 Glu Glu Pro Gly Asn Gly Thr Phe Thr Val Ile Leu Asn Gln Leu Thr  
 420 425 430  
 Ser Arg Asp Ala Gly Phe Tyr Trp Cys Leu Thr Asn Gly Asp Thr Leu  
 435 440 445  
 Trp Arg Thr Thr Val Glu Ile Lys Ile Ile Glu Gly Glu Pro Asn Leu

450	455	460
Lys Val Pro Gly Asn Val Thr Ala Val Leu Gly Glu Thr Leu Lys Val 465 470 475 480		
Pro Cys His Phe Pro Cys Lys Phe Ser Ser Tyr Glu Lys Tyr Trp Cys 485 490 495		
Lys Trp Asn Asn Thr Gly Cys Gln Ala Leu Pro Ser Gln Asp Glu Gly 500 505 510		
Pro Ser Lys Ala Phe Val Asn Cys Asp Glu Asn Ser Arg Leu Val Ser 515 520 525		
Leu Thr Leu Asn Leu Val Thr Arg Ala Asp Glu Gly Trp Tyr Trp Cys 530 535 540		
Gly Val Lys Gln Gly His Phe Tyr Gly Glu Thr Ala Ala Val Tyr Val 545 550 555 560		
Ala Val Glu Glu Arg Lys Ala Ala Gly Ser Arg Asp Val Ser Leu Ala 565 570 575		
Lys Ala Asp Ala Ala Pro Asp Glu Lys Val Leu Asp Ser Gly Phe Arg 580 585 590		
Glu Ile Glu Asn Lys Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu Glu 595 600 605		
Lys Ala Val Ala Asp Thr Arg Asp Gln Ala Asp Gly Ser Arg Ala Ser 610 615 620		
Val Asp Ser Gly Ser Ser Glu Glu Gln Gly Gly Ser Ser Arg Ala Leu 625 630 635 640		
Val Ser Thr Leu Val Pro Leu Gly Leu Val Leu Ala Val Gly Ala Val 645 650 655		
Ala Val Gly Val Ala Arg Ala Arg His Arg Lys Asn Val Asp Arg Val 660 665 670		
Ser Ile Arg Ser Tyr Arg Thr Asp Ile Ser Met Ser Asp Phe Glu Asn 675 680 685		
Ser Arg Glu Phe Gly Ala Asn Asp Asn Met Gly Ala Ser Ser Ile Thr 690 695 700		
Gln Glu Thr Ser Leu Gly Gly Lys Glu Glu Phe Val Ala Thr Thr Glu 705 710 715 720		
Ser Thr Thr Glu Thr Lys Glu Pro Lys Lys Ala Lys Arg Ser Ser Lys 725 730 735		
Glu Glu Ala Glu Met Ala Tyr Lys Asp Phe Leu Leu Gln Ser Ser Thr 740 745 750		
Val Ala Ala Glu Ala Gln Asp Gly Pro Gln Glu Ala 755 760		

<210> 2

<220>  
<223> bovine polymeric immunoglobulin receptor (pIgR)

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			20					25					30			
Gly	Arg	Ser	Val	Ser	Ile	Lys	Cys	Tyr	Tyr	Pro	Pro	Thr	Ser	Val	Asn	
		35					40					45				
Arg	His	Thr	Arg	Lys	Tyr	Trp	Cys	Arg	Gln	Gly	Ala	Gln	Gly	Arg	Cys	
	50					55					60					
Thr	Thr	Leu	Ile	Ser	Ser	Glu	Gly	Tyr	Val	Ser	Asp	Asp	Tyr	Val	Gly	
65					70					75					80	
Arg	Ala	Asn	Leu	Thr	Asn	Phe	Pro	Glu	Ser	Gly	Thr	Phe	Val	Val	Asp	
				85					90					95		
Ile	Ser	His	Leu	Thr	His	Lys	Asp	Ser	Gly	Arg	Tyr	Lys	Cys	Gly	Leu	
			100					105					110			
Gly	Ile	Ser	Ser	Arg	Gly	Leu	Asn	Phe	Asp	Val	Ser	Leu	Glu	Val	Ser	
		115					120					125				
Gln	Asp	Pro	Ala	Gln	Ala	Ser	His	Ala	His	Val	Tyr	Thr	Val	Asp	Leu	
	130					135					140					
Gly	Arg	Thr	Val	Thr	Ile	Asn	Cys	Pro	Phe	Thr	Arg	Ala	Asn	Ser	Glu	
145					150					155					160	
Lys	Arg	Lys	Ser	Leu	Cys	Lys	Lys	Thr	Ile	Gln	Asp	Cys	Phe	Gln	Val	
				165					170					175		
Val	Asp	Ser	Thr	Gly	Tyr	Val	Ser	Asn	Ser	Tyr	Lys	Asp	Arg	Ala	His	
			180					185					190			
Ile	Ser	Ile	Leu	Gly	Thr	Asn	Thr	Leu	Val	Phe	Ser	Val	Val	Ile	Asn	
		195					200					205				
Arg	Val	Lys	Leu	Ser	Asp	Ala	Gly	Met	Tyr	Val	Cys	Gln	Ala	Gly	Asp	
	210					215					220					
Asp	Ala	Lys	Ala	Asp	Lys	Ile	Asn	Ile	Asp	Leu	Gln	Val	Leu	Glu	Pro	
225					230					235					240	
Glu	Pro	Glu	Leu	Val	Tyr	Gly	Asp	Leu	Arg	Ser	Ser	Val	Thr	Phe	Asp	
				245					250					255		
Cys	Ser	Leu	Gly	Pro	Glu	Val	Ala	Asn	Val	Pro	Lys	Phe	Leu	Cys	Gln	
			260					265					270			
Lys	Lys	Asn	Gly	Gly	Ala	Cys	Asn	Val	Val	Ile	Asn	Thr	Leu	Gly	Lys	
		275					280					285				

Lys Ala Gln Asp Phe Gln Gly Arg Ile Val Ser Val Pro Lys Asp Asn  
 290 295 300  
 Gly Val Phe Ser Val His Ile Thr Ser Leu Arg Lys Glu Asp Ala Gly  
 305 310 315 320  
 Arg Tyr Val Cys Gly Ala Gln Pro Glu Gly Glu Pro Gln Asp Gly Trp  
 325 330 335  
 Pro Val Gln Ala Trp Gln Leu Phe Val Asn Glu Glu Thr Ala Ile Pro  
 340 345 350  
 Ala Ser Pro Ser Val Val Lys Gly Val Arg Gly Gly Ser Val Thr Val  
 355 360 365  
 Ser Cys Pro Tyr Asn Pro Lys Asp Ala Asn Ser Ala Lys Tyr Trp Cys  
 370 375 380  
 His Trp Glu Glu Ala Gln Asn Gly Arg Cys Pro Arg Leu Val Glu Ser  
 385 390 395 400  
 Arg Gly Leu Ile Lys Glu Gln Tyr Glu Gly Arg Leu Ala Leu Leu Thr  
 405 410 415  
 Glu Pro Gly Asn Gly Thr Tyr Thr Val Ile Leu Asn Gln Leu Thr Asp  
 420 425 430  
 Gln Asp Thr Gly Phe Tyr Trp Cys Val Thr Asp Gly Asp Thr Arg Trp  
 435 440 445  
 Ile Ser Thr Val Glu Leu Lys Val Val Gln Gly Glu Pro Ser Leu Lys  
 450 455 460  
 Val Pro Lys Asn Val Thr Ala Trp Leu Gly Glu Pro Leu Lys Leu Ser  
 465 470 475 480  
 Cys His Phe Pro Cys Lys Phe Tyr Ser Phe Glu Lys Tyr Trp Cys Lys  
 485 490 495  
 Trp Ser Asn Arg Gly Cys Ser Ala Leu Pro Thr Gln Asn Asp Gly Pro  
 500 505 510  
 Ser Gln Ala Phe Val Ser Cys Asp Gln Asn Ser Gln Val Val Ser Leu  
 515 520 525  
 Asn Leu Asp Thr Val Thr Lys Glu Asp Glu Gly Trp Tyr Trp Cys Gly  
 530 535 540  
 Val Lys Glu Gly Pro Arg Tyr Gly Glu Thr Ala Ala Val Tyr Val Ala  
 545 550 555 560  
 Val Glu Ser Arg Val Lys Gly Ser Gln Gly Ala Lys Gln Val Lys Ala  
 565 570 575  
 Ala Pro Ala Gly Ala Ala Ile Gln Ser Arg Ala Gly Glu Ile Gln Asn  
 580 585 590  
 Lys Ala Leu Leu Asp Pro Ser Phe Phe Ala Lys Glu Ser Val Lys Asp  
 595 600 605

Ala Ala Gly Gly Pro Gly Ala Pro Ala Asp Pro Gly Arg Pro Thr Gly  
 610 615 620  
 Tyr Ser Gly Ser Ser Lys Ala Leu Val Ser Thr Leu Val Pro Leu Ala  
 625 630 635 640  
 Leu Val Leu Val Ala Gly Val Val Ala Ile Gly Val Val Arg Ala Arg  
 645 650 655  
 His Arg Lys Asn Val Asp Arg Ile Ser Ile Arg Ser Tyr Arg Thr Asp  
 660 665 670  
 Ile Ser Met Ser Asp Phe Glu Asn Ser Arg Asp Phe Glu Gly Arg Asp  
 675 680 685  
 Asn Met Gly Ala Ser Pro Glu Ala Gln Glu Thr Ser Leu Gly Gly Lys  
 690 695 700  
 Asp Glu Phe Ala Thr Thr Thr Glu Asp Thr Val Glu Ser Lys Glu Pro  
 705 710 715 720  
 Lys Lys Ala Lys Arg Ser Ser Lys Glu Glu Ala Asp Glu Ala Phe Thr  
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 Thr Phe Leu Leu Gln Ala Lys Asn Leu Ala Ser Ala Ala Thr Gln Asn  
 740 745 750  
 Gly Pro Thr Glu Ala  
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<210> 3  
 <211> 769  
 <212> PRT  
 <213> Rattus sp.

<220>  
 <223> rat polymeric immunoglobulin receptor (pIgR)

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 Met Arg Leu Ser Leu Phe Ala Leu Leu Val Thr Val Phe Ser Gly Val  
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 Ser Thr Gln Ser Pro Ile Phe Gly Pro Gln Asp Val Ser Ser Ile Glu  
 20 25 30  
 Gly Asn Ser Val Ser Ile Thr Cys Tyr Tyr Pro Asp Thr Ser Val Asn  
 35 40 45  
 Arg His Thr Arg Lys Tyr Trp Cys Arg Gln Gly Ala Asn Gly Tyr Cys  
 50 55 60  
 Ala Thr Leu Ile Ser Ser Asn Gly Tyr Leu Ser Lys Glu Tyr Ser Gly  
 65 70 75 80  
 Arg Ala Ser Leu Ile Asn Phe Pro Glu Asn Ser Thr Phe Val Ile Asn  
 85 90 95  
 Ile Ala His Leu Thr Gln Glu Asp Thr Gly Ser Tyr Lys Cys Gly Leu  
 100 105 110



435					440					445					
Arg	Thr	Thr	Ile	Glu	Leu	Gln	Val	Ala	Glu	Ala	Thr	Lys	Lys	Pro	Asp
450						455					460				
Leu	Glu	Val	Thr	Pro	Gln	Asn	Ala	Thr	Ala	Val	Ile	Gly	Glu	Thr	Phe
465					470					475					480
Thr	Ile	Ser	Cys	His	Tyr	Pro	Cys	Lys	Phe	Tyr	Ser	Gln	Glu	Lys	Tyr
				485					490					495	
Trp	Cys	Lys	Trp	Ser	Asn	Asp	Gly	Cys	His	Ile	Leu	Pro	Ser	His	Asp
			500					505					510		
Glu	Gly	Ala	Arg	Gln	Ser	Ser	Val	Ser	Cys	Asp	Gln	Ser	Ser	Gln	Ile
		515					520					525			
Val	Ser	Met	Thr	Leu	Asn	Pro	Val	Lys	Lys	Glu	Asp	Glu	Gly	Trp	Tyr
	530					535					540				
Trp	Cys	Gly	Val	Lys	Glu	Gly	Gln	Val	Tyr	Gly	Glu	Thr	Thr	Ala	Ile
545					550					555					560
Tyr	Val	Ala	Val	Glu	Glu	Arg	Thr	Arg	Gly	Ser	Pro	His	Ile	Asn	Pro
				565					570					575	
Thr	Asp	Ala	Asn	Ala	Arg	Ala	Lys	Asp	Ala	Pro	Glu	Glu	Glu	Ala	Met
			580					585					590		
Glu	Ser	Ser	Val	Arg	Glu	Asp	Glu	Asn	Lys	Ala	Asn	Leu	Asp	Pro	Arg
		595					600					605			
Leu	Phe	Ala	Asp	Glu	Arg	Glu	Ile	Gln	Asn	Ala	Gly	Asp	Gln	Ala	Gln
	610					615					620				
Glu	Asn	Arg	Ala	Ser	Gly	Asn	Ala	Gly	Ser	Ala	Gly	Gly	Gln	Ser	Gly
625					630					635					640
Ser	Ser	Lys	Val	Leu	Phe	Ser	Thr	Leu	Val	Pro	Leu	Gly	Leu	Val	Leu
				645					650					655	
Ala	Val	Gly	Ala	Val	Ala	Val	Trp	Val	Ala	Arg	Val	Arg	His	Arg	Lys
			660					665					670		
Asn	Val	Asp	Arg	Met	Ser	Ile	Ser	Ser	Tyr	Arg	Thr	Asp	Ile	Ser	Met
		675					680					685			
Gly	Asp	Phe	Arg	Asn	Ser	Arg	Asp	Leu	Gly	Gly	Asn	Asp	Asn	Met	Gly
	690					695					700				
Ala	Thr	Pro	Asp	Thr	Gln	Glu	Thr	Val	Leu	Glu	Gly	Lys	Asp	Glu	Ile
705					710					715					720
Glu	Thr	Thr	Thr	Glu	Cys	Thr	Thr	Glu	Pro	Glu	Glu	Ser	Lys	Lys	Ala
				725					730					735	
Lys	Arg	Ser	Ser	Lys	Glu	Glu	Ala	Asp	Met	Ala	Tyr	Ser	Ala	Phe	Leu
			740					745					750		
Phe	Gln	Ser	Ser	Thr	Ile	Ala	Ala	Gln	Val	His	Asp	Gly	Pro	Gln	Glu
		755					760					765			



Ala

<210> 4  
<211> 771  
<212> PRT  
<213> Mus sp.

<220>  
<223> mouse polymeric immunoglobulin receptor (pIgR)

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Ser Thr Lys Ser Pro Ile Phe Gly Pro Gln Glu Val Ser Ser Ile Glu  
20 25 30  
Gly Asp Ser Val Ser Ile Thr Cys Tyr Tyr Pro Asp Thr Ser Val Asn  
35 40 45  
Arg His Thr Arg Lys Tyr Trp Cys Arg Gln Gly Ala Ser Gly Met Cys  
50 55 60  
Thr Thr Leu Ile Ser Ser Asn Gly Tyr Leu Ser Lys Glu Tyr Ser Gly  
65 70 75 80  
Arg Ala Asn Leu Ile Asn Phe Pro Glu Asn Asn Thr Phe Val Ile Asn  
85 90 95  
Ile Glu Gln Leu Thr Gln Asp Asp Thr Gly Ser Tyr Lys Cys Gly Leu  
100 105 110  
Gly Thr Ser Asn Arg Gly Leu Ser Phe Asp Val Ser Leu Glu Val Ser  
115 120 125  
Gln Val Pro Glu Leu Pro Ser Asp Thr His Val Tyr Thr Lys Asp Ile  
130 135 140  
Gly Arg Asn Val Thr Ile Glu Cys Pro Phe Lys Arg Glu Asn Ala Pro  
145 150 155 160  
Ser Lys Lys Ser Leu Cys Lys Lys Thr Asn Gln Ser Cys Glu Leu Val  
165 170 175  
Ile Asp Ser Thr Glu Lys Val Asn Pro Ser Tyr Ile Gly Arg Ala Lys  
180 185 190  
Leu Phe Met Lys Gly Thr Asp Leu Thr Val Phe Tyr Val Asn Ile Ser  
195 200 205  
His Leu Thr His Asn Asp Ala Gly Leu Tyr Ile Cys Gln Ala Gly Glu  
210 215 220  
Gly Pro Ser Ala Asp Lys Lys Asn Val Asp Leu Gln Val Leu Ala Pro  
225 230 235 240  
Glu Pro Glu Leu Leu Tyr Lys Asp Leu Arg Ser Ser Val Thr Phe Glu  
245 250 255

Cys Asp Leu Gly Arg Glu Val Ala Asn Glu Ala Lys Tyr Leu Cys Arg  
 260 265 270  
 Met Asn Lys Glu Thr Cys Asp Val Ile Ile Asn Thr Leu Gly Lys Arg  
 275 280 285  
 Asp Pro Asp Phe Glu Gly Arg Ile Leu Ile Thr Pro Lys Asp Asp Asn  
 290 295 300  
 Gly Arg Phe Ser Val Leu Ile Thr Gly Leu Arg Lys Glu Asp Ala Gly  
 305 310 315 320  
 His Tyr Gln Cys Gly Ala His Ser Ser Gly Leu Pro Gln Glu Gly Trp  
 325 330 335  
 Pro Ile Gln Thr Trp Gln Leu Phe Val Asn Glu Glu Ser Thr Ile Pro  
 340 345 350  
 Asn Arg Arg Ser Val Val Lys Gly Val Thr Gly Gly Ser Val Ala Ile  
 355 360 365  
 Ala Cys Pro Tyr Asn Pro Lys Glu Ser Ser Ser Leu Lys Tyr Trp Cys  
 370 375 380  
 Arg Trp Glu Gly Asp Gly Asn Gly His Cys Pro Val Leu Val Gly Thr  
 385 390 395 400  
 Gln Ala Gln Val Gln Glu Glu Tyr Glu Gly Arg Leu Ala Leu Phe Asp  
 405 410 415  
 Gln Pro Gly Asn Gly Thr Tyr Thr Val Ile Leu Asn Gln Leu Thr Thr  
 420 425 430  
 Glu Asp Ala Gly Phe Tyr Trp Cys Leu Thr Asn Gly Asp Ser Arg Trp  
 435 440 445  
 Arg Thr Thr Ile Glu Leu Gln Val Ala Glu Ala Thr Arg Glu Pro Asn  
 450 455 460  
 Leu Glu Val Thr Pro Gln Asn Ala Thr Ala Val Leu Gly Glu Thr Phe  
 465 470 475 480  
 Thr Val Ser Cys His Tyr Pro Cys Lys Phe Tyr Ser Gln Glu Lys Tyr  
 485 490 495  
 Trp Cys Lys Trp Ser Asn Lys Gly Cys His Ile Leu Pro Ser His Asp  
 500 505 510  
 Glu Gly Ala Arg Gln Ser Ser Val Ser Cys Asp Gln Ser Ser Gln Leu  
 515 520 525  
 Val Ser Met Thr Leu Asn Pro Val Ser Lys Glu Asp Glu Gly Trp Tyr  
 530 535 540  
 Trp Cys Gly Val Lys Gln Gly Gln Thr Tyr Gly Glu Thr Thr Ala Ile  
 545 550 555 560  
 Tyr Ile Ala Val Glu Glu Arg Thr Arg Gly Ser Ser His Val Asn Pro  
 565 570 575  
 Thr Asp Ala Asn Ala Arg Ala Lys Val Ala Leu Glu Glu Glu Val Val

580					585					590					
Asp	Ser	Ser	Ile	Ser	Glu	Lys	Glu	Asn	Lys	Ala	Ile	Pro	Asn	Pro	Gly
		595					600					605			
Pro	Phe	Ala	Asn	Glu	Arg	Glu	Ile	Gln	Asn	Val	Gly	Asp	Gln	Ala	Gln
	610					615					620				
Glu	Asn	Arg	Ala	Ser	Gly	Asp	Ala	Gly	Ser	Ala	Asp	Gly	Gln	Ser	Arg
625					630					635					640
Ser	Ser	Ser	Ser	Lys	Val	Leu	Phe	Ser	Thr	Leu	Val	Pro	Leu	Gly	Leu
				645					650					655	
Val	Leu	Ala	Val	Gly	Ala	Ile	Ala	Val	Trp	Val	Ala	Arg	Val	Arg	His
			660					665					670		
Arg	Lys	Asn	Val	Asp	Arg	Met	Ser	Ile	Ser	Ser	Tyr	Arg	Thr	Asp	Ile
		675					680					685			
Ser	Met	Ala	Asp	Phe	Lys	Asn	Ser	Arg	Asp	Leu	Gly	Gly	Asn	Asp	Asn
	690					695					700				
Met	Gly	Ala	Ser	Pro	Asp	Thr	Gln	Gln	Thr	Val	Ile	Glu	Gly	Lys	Asp
705					710					715					720
Glu	Ile	Val	Thr	Thr	Thr	Glu	Cys	Thr	Ala	Glu	Pro	Glu	Glu	Ser	Lys
				725					730					735	
Lys	Ala	Lys	Arg	Ser	Ser	Lys	Glu	Glu	Ala	Asp	Met	Ala	Tyr	Ser	Ala
			740					745					750		
Phe	Leu	Leu	Gln	Ser	Ser	Thr	Ile	Ala	Ala	Gln	Val	His	Asp	Gly	Pro
		755					760					765			
Gln	Glu	Ala													
	770														

<210> 5  
 <211> 732  
 <212> PRT  
 <213> Didelphis sp.

<220>  
 <223> possum polymeric immunoglobulin receptor (pIgR)

<400> 5  
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 20 25 30  
 Gly Ser Val Ser Ile Gln Cys Phe Tyr Pro Ser Ser Ser Val Asn Arg  
 35 40 45  
 His Gly Arg Lys Tyr Phe Cys Leu Gln Asn Leu Arg Gln Ser Cys Glu  
 50 55 60  
 Thr Ile Val Ser Ser Asn Gly Phe Val Ser Glu Arg Phe Ser Gly Arg

65	70	75	80
Ala Lys Leu Thr	Asn Phe Pro Gly	Asn Asn Ser Phe Leu Ile	Gln Ile
	85	90	95
Ser Gln Leu Glu	Lys Glu Asp Ile	Gly Leu Tyr Lys Cys	Gly Leu Gly
	100	105	110
Thr Ser Asn Arg	Gly Leu Ser Phe	Asp Ile Thr Leu	Glu Val Gly Glu
	115	120	125
Gly Pro Asn Leu	Pro Asn Asn Thr	Glu Val Ile Val	Thr Glu Val Gly
	130	135	140
Lys Thr Val Ser	Ile Asn Cys Pro	Phe Gln Glu Gln	Asn Thr Gln Asp
	145	150	155
Arg Lys Phe Leu	Cys Lys Lys Asp	Gly Glu Ser Cys	Ala Leu Val Ile
	165	170	175
Asp Ser Gln Glu	Gln Val Gly Pro	Asp Tyr Thr Gly	Arg Ala Arg Leu
	180	185	190
Ser Ile Ser Gly	Thr Ser Ser Arg	Val Phe Val Val	Thr Ile Ser Gln
	195	200	205
Ile Lys Arg Gln	Asp Val Gly Met	Tyr Val Cys Gly	Val Gly Glu Asp
	210	215	220
Ser Asp Thr Gly	Ile Gln Lys Asn	Val Asp Leu Lys	Leu Leu Glu Pro
	225	230	235
Glu Pro Glu Leu	Leu Tyr Ala Glu	Leu Gly Gly Ser	Val Thr Leu Asn
	245	250	255
Cys Ala Leu Gly	Ser Thr Val Ala	Ser Val Pro Lys	Phe Leu Cys Gln
	260	265	270
Met Arg Ala Lys	Glu Thr Cys Asp	Leu Val Ile Asn	Ser Lys Gly Phe
	275	280	285
Thr Asn Asn Ala	Thr His Gly Arg	Ile Leu Phe Ser	His Thr Thr Glu
	290	295	300
Thr Gly Ser Phe	Ser Ile Met Ile	Thr Gln Val Arg	Lys Glu Asp Glu
	305	310	315
Gly Val Tyr His	Cys Gly Ala Gln	Glu Asp Gly Gln	Pro Ser Glu Glu
	325	330	335
Gly Pro Ile Arg	Ala Leu Gln Leu	Phe Val Ser Glu	Glu Thr Thr Val
	340	345	350
Pro Lys Ser Pro	Leu Val Val Lys	Gly Pro Ser Gly	Gly Ser Val Thr
	355	360	365
Ile Thr Cys His	Tyr Asp Pro Lys	Lys Asn Asn Thr	Leu Lys Tyr Trp
	370	375	380
Cys Lys Trp Glu	Gly Ser Ser His	Cys Thr Lys Leu	Val Asp Ser Leu
	385	390	395
			400

Gly	Met	Val	Asp	Glu	Ser	Tyr	Glu	Gly	Arg	Val	Ala	Leu	Trp	Asp	Glu	
				405					410					415		
Pro	Glu	Asn	Gly	Ile	Phe	Thr	Val	Ile	Leu	Asn	Gln	Leu	Thr	Pro	Gln	
			420					425					430			
Asp	Ala	Gly	Tyr	Tyr	Trp	Cys	Leu	Ser	Asn	Gly	Glu	His	Asn	Arg	Lys	
		435					440					445				
Ser	Ser	Val	Lys	Ile	Glu	Ile	Asn	Asp	Gly	Gln	Pro	Leu	Leu	Ile	Ala	
		450				455					460					
Pro	Lys	Thr	Val	Thr	Ala	Gln	Leu	Gly	Gln	Ser	Leu	Thr	Ile	Ser	Cys	
					470					475					480	
His	Tyr	Pro	Cys	Lys	Phe	Tyr	Ser	Tyr	Glu	Lys	Tyr	Trp	Cys	Lys	Trp	
				485					490					495		
Ser	Asn	Gln	Gly	Cys	Glu	Thr	Leu	Pro	Thr	Gln	Glu	Glu	Gly	Ser	Ser	
			500					505					510			
Gln	Ala	Phe	Val	Asp	Cys	Asn	Gln	Asn	Ser	Arg	Asn	Val	Ser	Leu	Thr	
		515					520					525				
Leu	Asn	Ser	Val	Thr	Arg	Asp	His	Glu	Gly	Trp	Tyr	Trp	Cys	Gly	Val	
		530				535					540					
Lys	Asn	Gly	Gln	Asn	Tyr	Gly	Glu	Thr	Ile	Ala	Val	Ser	Val	Ala	Ser	
					550					555					560	
Glu	Glu	Glu	Val	Ser	Gly	Asn	Ala	Ile	Gln	Pro	Thr	Asn	Ala	Val	Leu	
				565					570					575		
Asn	Glu	Asp	Ala	Val	Glu	Pro	Lys	Val	Arg	Gly	Lys	Glu	Ile	Glu	Val	
			580					585					590			
Pro	Thr	Asp	Leu	Gly	Ser	Thr	Glu	Glu	His	Ser	Gly	Gly	Ser	Ser	Val	
		595					600					605				
Leu	Val	Ser	Thr	Leu	Val	Pro	Leu	Ala	Leu	Val	Leu	Thr	Val	Gly	Ala	
		610				615					620					
Val	Ala	Leu	Gly	Ile	Ile	Lys	Ala	Arg	Arg	Trp	Arg	Phe	Ser	Asp	Arg	
					630					635					640	
Val	Ser	Val	Gly	Ser	Tyr	Arg	Thr	Asp	Leu	Ser	Met	Ser	Glu	Leu	Glu	
				645					650					655		
Asn	Asn	Pro	Arg	Gln	Phe	Gly	Ala	Asn	Glu	Asn	Met	Asp	Ala	Ser	Val	
			660					665					670			
Gln	Glu	Thr	Thr	Leu	Gly	Gly	Glu	Asp	Glu	Leu	Ala	Thr	Ala	Thr	Glu	
			675				680					685				
Ser	Thr	Val	Glu	Ile	Glu	Glu	Pro	Lys	Lys	Ala	Lys	Arg	Ser	Ser	Lys	
			690			695					700					
Glu	Glu	Ala	Asp	Leu	Ala	Tyr	Ser	Ala	Phe	Leu	Leu	Gln	Ser	Asn	Thr	
					710					715					720	

Ile Ala Ala Glu His Gln Asp Gly Pro Lys Glu Ala  
725 730

<210> 6  
<211> 773  
<212> PRT  
<213> Oryctolagus cuniculus

<220>  
<223> rabbit polymeric immunoglobulin receptor (pIgR)

<400> 6  
Met Ala Leu Phe Leu Leu Thr Cys Leu Leu Ala Val Phe Ser Ala Ala  
1 5 10 15  
Thr Ala Gln Ser Ser Leu Leu Gly Pro Ser Ser Ile Phe Gly Pro Gly  
20 25 30  
Glu Val Asn Val Leu Glu Gly Asp Ser Val Ser Ile Thr Cys Tyr Tyr  
35 40 45  
Pro Thr Thr Ser Val Thr Arg His Ser Arg Lys Phe Trp Cys Arg Glu  
50 55 60  
Glu Glu Ser Gly Arg Cys Val Thr Leu Ala Ser Thr Gly Tyr Thr Ser  
65 70 75 80  
Gln Glu Tyr Ser Gly Arg Gly Lys Leu Thr Asp Phe Pro Asp Lys Gly  
85 90 95  
Glu Phe Val Val Thr Val Asp Gln Leu Thr Gln Asn Asp Ser Gly Ser  
100 105 110  
Tyr Lys Cys Gly Val Gly Val Asn Gly Arg Gly Leu Asp Phe Gly Val  
115 120 125  
Asn Val Leu Val Ser Gln Lys Pro Glu Pro Asp Asp Val Val Tyr Lys  
130 135 140  
Gln Tyr Glu Ser Tyr Thr Val Thr Ile Thr Cys Pro Phe Thr Tyr Ala  
145 150 155 160  
Thr Arg Gln Leu Lys Lys Ser Phe Tyr Lys Val Glu Asp Gly Glu Leu  
165 170 175  
Val Leu Ile Ile Asp Ser Ser Ser Lys Glu Ala Lys Asp Pro Arg Tyr  
180 185 190  
Lys Gly Arg Ile Thr Leu Gln Ile Gln Ser Thr Thr Ala Lys Glu Phe  
195 200 205  
Thr Val Thr Ile Lys His Leu Gln Leu Asn Asp Ala Gly Gln Tyr Val  
210 215 220  
Cys Gln Ser Gly Ser Asp Pro Thr Ala Glu Glu Gln Asn Val Asp Leu  
225 230 235 240  
Arg Leu Leu Thr Pro Gly Leu Leu Tyr Gly Asn Leu Gly Gly Ser Val  
245 250 255

Thr Phe Glu Cys Ala Leu Asp Ser Glu Asp Ala Asn Ala Val Ala Ser  
 260 265 270  
 Leu Arg Gln Val Arg Gly Gly Asn Val Val Ile Asp Ser Gln Gly Thr  
 275 280 285  
 Ile Asp Pro Ala Phe Glu Gly Arg Ile Leu Phe Thr Lys Ala Glu Asn  
 290 295 300  
 Gly His Phe Ser Val Val Ile Ala Gly Leu Arg Lys Glu Asp Thr Gly  
 305 310 315 320  
 Asn Tyr Leu Cys Gly Val Gln Ser Asn Gly Gln Ser Gly Asp Gly Pro  
 325 330 335  
 Thr Gln Leu Arg Gln Leu Phe Val Asn Glu Glu Ile Asp Val Ser Arg  
 340 345 350  
 Ser Pro Pro Val Leu Lys Gly Phe Pro Gly Gly Ser Val Thr Ile Arg  
 355 360 365  
 Cys Pro Tyr Asn Pro Lys Arg Ser Asp Ser His Leu Gln Leu Tyr Leu  
 370 375 380  
 Trp Glu Gly Ser Gln Thr Arg His Leu Leu Val Asp Ser Gly Glu Gly  
 385 390 395 400  
 Leu Val Gln Lys Asp Tyr Thr Gly Arg Leu Ala Leu Phe Glu Glu Pro  
 405 410 415  
 Gly Asn Gly Thr Phe Ser Val Val Leu Asn Gln Leu Thr Ala Glu Asp  
 420 425 430  
 Glu Gly Phe Tyr Trp Cys Val Ser Asp Asp Asp Glu Ser Leu Thr Thr  
 435 440 445  
 Ser Val Lys Leu Gln Ile Val Asp Gly Glu Pro Ser Pro Thr Ile Asp  
 450 455 460  
 Lys Phe Thr Ala Val Gln Gly Glu Pro Val Glu Ile Thr Cys His Phe  
 465 470 475 480  
 Pro Cys Lys Tyr Phe Ser Ser Glu Lys Tyr Trp Cys Lys Trp Asn Asp  
 485 490 495  
 His Gly Cys Glu Asp Leu Pro Thr Lys Leu Ser Ser Ser Gly Asp Leu  
 500 505 510  
 Val Lys Cys Asn Asn Asn Leu Val Leu Thr Leu Thr Leu Asp Ser Val  
 515 520 525  
 Ser Glu Asp Asp Glu Gly Trp Tyr Trp Cys Gly Ala Lys Asp Gly His  
 530 535 540  
 Glu Phe Glu Glu Val Ala Ala Val Arg Val Glu Leu Thr Glu Pro Ala  
 545 550 555 560  
 Lys Val Ala Val Glu Pro Ala Lys Val Pro Val Asp Pro Ala Lys Ala  
 565 570 575  
 Ala Pro Ala Pro Ala Glu Glu Lys Ala Lys Ala Arg Cys Pro Val Pro

580					585					590						
Arg	Arg	Arg	Gln	Trp	Tyr	Pro	Leu	Ser	Arg	Lys	Leu	Arg	Thr	Ser	Cys	
595					600					605						
Pro	Glu	Pro	Arg	Leu	Leu	Ala	Glu	Glu	Val	Ala	Val	Gln	Ser	Ala	Glu	
610					615					620						
Asp	Pro	Ala	Ser	Gly	Ser	Arg	Ala	Ser	Val	Asp	Ala	Ser	Ser	Ala	Ser	
625					630					635					640	
Gly	Gln	Ser	Gly	Ser	Ala	Lys	Val	Leu	Ile	Ser	Thr	Leu	Val	Pro	Leu	
645					650					655						
Gly	Leu	Val	Leu	Ala	Ala	Gly	Ala	Met	Ala	Val	Ala	Ile	Ala	Arg	Ala	
660					665					670						
Arg	His	Arg	Arg	Asn	Val	Asp	Arg	Val	Ser	Ile	Gly	Ser	Tyr	Arg	Thr	
675					680					685						
Asp	Ile	Ser	Met	Ser	Asp	Leu	Glu	Asn	Ser	Arg	Glu	Phe	Gly	Ala	Ile	
690					695					700						
Asp	Asn	Pro	Ser	Ala	Cys	Pro	Asp	Ala	Arg	Glu	Thr	Ala	Leu	Gly	Gly	
705					710					715					720	
Lys	Asp	Glu	Leu	Ala	Thr	Ala	Thr	Glu	Ser	Thr	Val	Glu	Ile	Glu	Glu	
725					730					735						
Pro	Lys	Lys	Ala	Lys	Arg	Ser	Ser	Lys	Glu	Glu	Ala	Asp	Leu	Ala	Tyr	
740					745					750						
Ser	Ala	Phe	Leu	Leu	Gln	Ser	Asn	Thr	Ile	Ala	Ala	Glu	His	Gln	Asp	
755					760					765						
Gly	Pro	Lys	Glu	Ala												
770																

<210> 7  
 <211> 23  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:extracellular  
 residues of rabbit pIgR that precede  
 membrane-spanning segment

<400> 7  
 Asp Pro Ala Ser Gly Ser Arg Ala Ser Val Asp Ala Ser Ser Ala Ser  
 1 5 10 15

Gly Gln Ser Gly Ser Ala Lys  
 20

<210> 8  
 <211> 24  
 <212> PRT  
 <213> Artificial Sequence



<220>

<223> Description of Artificial Sequence:extracellular  
membrane proximal amino acids of rabbit pIgR with  
C-terminal Cys added for conjugation

<400> 8

Asp Pro Ala Ser Gly Ser Arg Ala Ser Val Asp Ala Ser Ser Ala Ser  
1 5 10 15

Gly Gln Ser Gly Ser Ala Lys Cys  
20

<210> 9

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:extracellular  
membrane proximal amino acids of rabbit pIgR with  
C-terminal Cys added for conjugation

<400> 9

Ala Ser Val Asp Ala Ser Ser Ala Ser Gly Gln Ser Gly Ser Ala Lys  
1 5 10 15

Cys

<210> 10

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:human pIgR  
epitope for scFv and antibody 4A

<400> 10

Gln Asp Pro Arg Leu Phe  
1 5

<210> 11

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:rat pIgR  
epitope for scFv and antibody 4A and 5D

<400> 11

Leu Asp Pro Arg Leu Phe  
1 5

<210> 12

<211> 9

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:human pIgR  
 epitope for antibody 5D  
  
 <400> 12  
 Lys Ala Ile Gln Asp Pro Arg Leu Phe  
 1 5  
  
 <210> 13  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:rat pIgR  
 epitope for scFv 2E  
  
 <400> 13  
 Leu Asp Pro Arg Leu Phe Ala Asp Glu Arg Glu Ile  
 1 5 10  
  
 <210> 14  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:rat pIgR  
 epitope for scFv 2H  
  
 <400> 14  
 Asp Glu Asn Lys Ala Asn Leu Asp Pro Arg Leu Phe  
 1 5 10  
  
 <210> 15  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:rat pIgR  
 epitope for scFv 1F  
  
 <400> 15  
 Arg Leu Phe Ala Asp Glu Arg Glu Ile  
 1 5  
  
 <210> 16  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:rat pIgR epitoe

for scFvs 5F, 10H, 1C, 7H and 6B

<400> 16

Leu Asp Pro Arg Leu Phe Ala Asp Glu  
1 5

<210> 17

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:portion of  
human pIgR encompassing part of domain 5 and  
domain 6

<400> 17

Gly His Phe Tyr Gly Glu Thr Ala Ala Val Tyr Val Ala Val Glu Glu  
1 5 10 15

Arg Lys Ala Ala Gly Ser Arg Asp Val Ser Leu Ala Lys Ala Asp Ala  
20 25 30

Ala Pro Asp Glu Lys Val Leu Asp Ser Gly Phe Arg Glu Ile Glu Asn  
35 40 45

Lys Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu Glu Lys Ala Val Ala  
50 55 60

Asp Thr Arg Asp Gln Ala Asp Gly Ser Arg Ala Ser Val Asp Ser Gly  
65 70 75 80

Ser Ser Glu Glu Gln Gly Gly Ser Ser Arg  
85 90

<210> 18

<211> 93

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:portion of rat  
pIgR encompassing part of domain 5 and domain 6

<400> 18

Gly Gln Val Tyr Gly Glu Thr Thr Ala Ile Tyr Val Ala Val Glu Glu  
1 5 10 15

Arg Thr Arg Gly Ser Pro His Ile Asn Pro Thr Asp Ala Asn Ala Arg  
20 25 30

Ala Lys Asp Ala Pro Glu Glu Glu Ala Met Glu Ser Ser Val Arg Glu  
35 40 45

Asp Glu Asn Lys Ala Asn Leu Asp Pro Arg Leu Phe Ala Asp Glu Arg  
50 55 60

Glu Ile Gln Asn Ala Gly Asp Gln Ala Gln Glu Asn Arg Ala Ser Gly  
65 70 75 80

Asn Ala Gly Ser Ala Gly Gly Gln Ser Gly Ser Ser Lys  
85 90

<210> 19  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:human pIgR  
stalk

<400> 19  
Glu Lys Ala Val Ala Asp Thr Arg Asp Gln Ala Asp Gly Ser Arg Ala  
1 5 10 15  
Ser Val Asp Ser Gly Ser Ser Glu Glu Gln Gly Gly Ser Ser Arg  
20 25 30

<210> 20  
<211> 95  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:portion of  
human pIgR

<400> 20  
Cys Gly Val Lys Gln Gly His Phe Tyr Gly Glu Thr Ala Ala Val Tyr  
1 5 10 15  
Val Ala Val Glu Glu Arg Lys Ala Ala Gly Ser Arg Asp Val Ser Leu  
20 25 30  
Ala Lys Ala Asp Ala Ala Pro Asp Glu Lys Val Leu Asp Ser Gly Phe  
35 40 45  
Arg Glu Ile Glu Asn Lys Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu  
50 55 60  
Glu Lys Ala Val Ala Asp Thr Arg Asp Gln Ala Asp Gly Ser Arg Ala  
65 70 75 80  
Ser Val Asp Ser Gly Ser Ser Glu Glu Gln Gly Gly Ser Ser Arg  
85 90 95

<210> 21  
<211> 98  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:portion of rat  
pIgR

<400> 21

Cys Gly Val Lys Glu Gly Gln Val Tyr Gly Glu Thr Thr Ala Ile Tyr  
 1 5 10 15  
 Val Ala Val Glu Glu Arg Thr Arg Gly Ser Pro His Ile Asn Pro Thr  
 20 25 30  
 Asp Ala Asn Ala Arg Ala Lys Asp Ala Pro Glu Glu Glu Ala Met Glu  
 35 40 45  
 Ser Ser Val Arg Glu Asp Glu Asn Lys Ala Asn Leu Asp Pro Arg Leu  
 50 55 60  
 Phe Ala Asp Glu Arg Glu Ile Gln Asn Ala Gly Asp Gln Ala Gln Glu  
 65 70 75 80  
 Asn Arg Ala Ser Gly Asn Ala Gly Ser Ala Gly Gly Gln Ser Gly Ser  
 85 90 95

Ser Lys

<210> 22  
 <211> 288  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial  
 Sequence: Pelb/4AF/myc/6HIS

<400> 22  
 Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala  
 1 5 10 15  
 Ala Gln Pro Ala Met Ala Gln Val Gln Leu Val Gln Ser Gly Gly Gly  
 20 25 30  
 Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
 35 40 45  
 Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly  
 50 55 60  
 Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr  
 65 70 75 80  
 Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn  
 85 90 95  
 Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp  
 100 105 110  
 Thr Ala Val Tyr Tyr Cys Ala Arg Ser Phe Thr Val Asn Ser Gly Tyr  
 115 120 125  
 Phe Gln His Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly  
 130 135 140  
 Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Ile Val  
 145 150 155 160

Leu	Thr	Gln	Ser	Pro	Ser	Thr	Leu	Ser	Ala	Ser	Ile	Gly	Asp	Arg	Val
				165					170					175	
Thr	Ile	Thr	Cys	Arg	Ala	Ser	Glu	Gly	Ile	Tyr	His	Trp	Leu	Ala	Trp
			180					185					190		
Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Ala
	195						200					205			
Ser	Ser	Leu	Ala	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser
	210					215					220				
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe
225					230					235					240
Ala	Thr	Tyr	Tyr	Cys	Gln	His	Tyr	Asp	Ser	Thr	Pro	Pro	Thr	Phe	Gly
				245					250					255	
Gln	Gly	Thr	Lys	Val	Asp	Ile	Lys	Arg	Ala	Ala	Ala	Glu	Gln	Lys	Leu
			260					265					270		
Ile	Ser	Glu	Glu	Asp	Leu	Asn	Gly	Ala	Ala	His	His	His	His	His	His
		275					280					285			

<210> 23  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:peptide linker

<400> 23  
 Gly Gly Gly Ser  
 1

<210> 24  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:peptide linker

<400> 24  
 Gly Gly Gly Ser Gly Gly Gly  
 1 5

<210> 25  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:peptide linker

<400> 25  
 Gly Gly Gly Gly Ser

1

5

<210> 26

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:scFv 4A epitope

<400> 26

Asp Pro Arg Leu Phe

1

5